FINDING OF NO SIGNIFICANT IMPACT/RATIONALE

DOI-BLM-NM-P010-2010-0076-EA

FINDING OF NO SIGNIFICANT IMPACT: I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined the proposed action will not have significant impacts n the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Rationale for Recommendations: The proposed action would not result in any undue or unnecessary environmental degradation. The proposed action will be in compliance with the 1997 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

/s/ J.H. Parman 4/4/11
J H Parman Date
Assistant Field Manager

Proposed Decision: It is implement the proposed action as described in DOI-BLM-NM-P010-2010-0076-EA. This proposed action will authorize the issuance of a ten-year grazing permit on allotment 63074. The permit will authorize 136 cattle and 4 horses for a total of 957 AUMs on 59 percent public land. A rangeland health assessment was completed for this allotment and it was found that the allotment did not meet the Standards for Public Land Health. Therefore, the BLM also will install approximately 30,000 feet of pipeline which will replace existing pipeline and install three new tire troughs and three 3000 gallon storage tanks along the pipeline to promote better livestock distribution. The mitigation measures identified in the attached EA have been formulated into terms and conditions that will be attached to the grazing permit. This decision incorporates, by reference, those conditions identified in the attached Environmental Assessment.

The Proposed Action will be in compliance with the 1997 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

If you wish to protest this proposed decision in accordance with 43 CFR 4160.2, you are allowed 15 days to do so in person or in writing to the authorized officer, after the receipt of this decision. Please be specific in your points of protest.

The protest shall be filed with the Field Manager, Bureau of Land Management, 2909 West 2nd, Roswell, NM 88201. This protest should specify, clearly and concisely, why you think the proposed action is in error.

In the absence of a protest within the time allowed, the above decision shall constitute my final decision. Should this notice become the final decision, you are allowed an additional 30 days within which to file an appeal for the purpose of a hearing before the Interior Board of Land Appeals, and to petition for stay of the decision pending final determination on the appeal (43 CFR 4.21 and 4.410). If a petition for stay is not requested and granted, the decision will be put into effect following the 30-day appeal period. The appeal and petition for stay should be filed with the Field Manager at the above address. The appeal should specify, clearly and concisely, why you think the decision is in error. The petition for stay should specify how you will be harmed if the stay is not granted.

/s/ J.H. Parman 4/4/11
J H Parman Date
Assistant Field Manager

ENVIRONMENTAL ASSESSMENT

GRAZING AUTHORIZATIONS

For

ALLOTMENT 63074

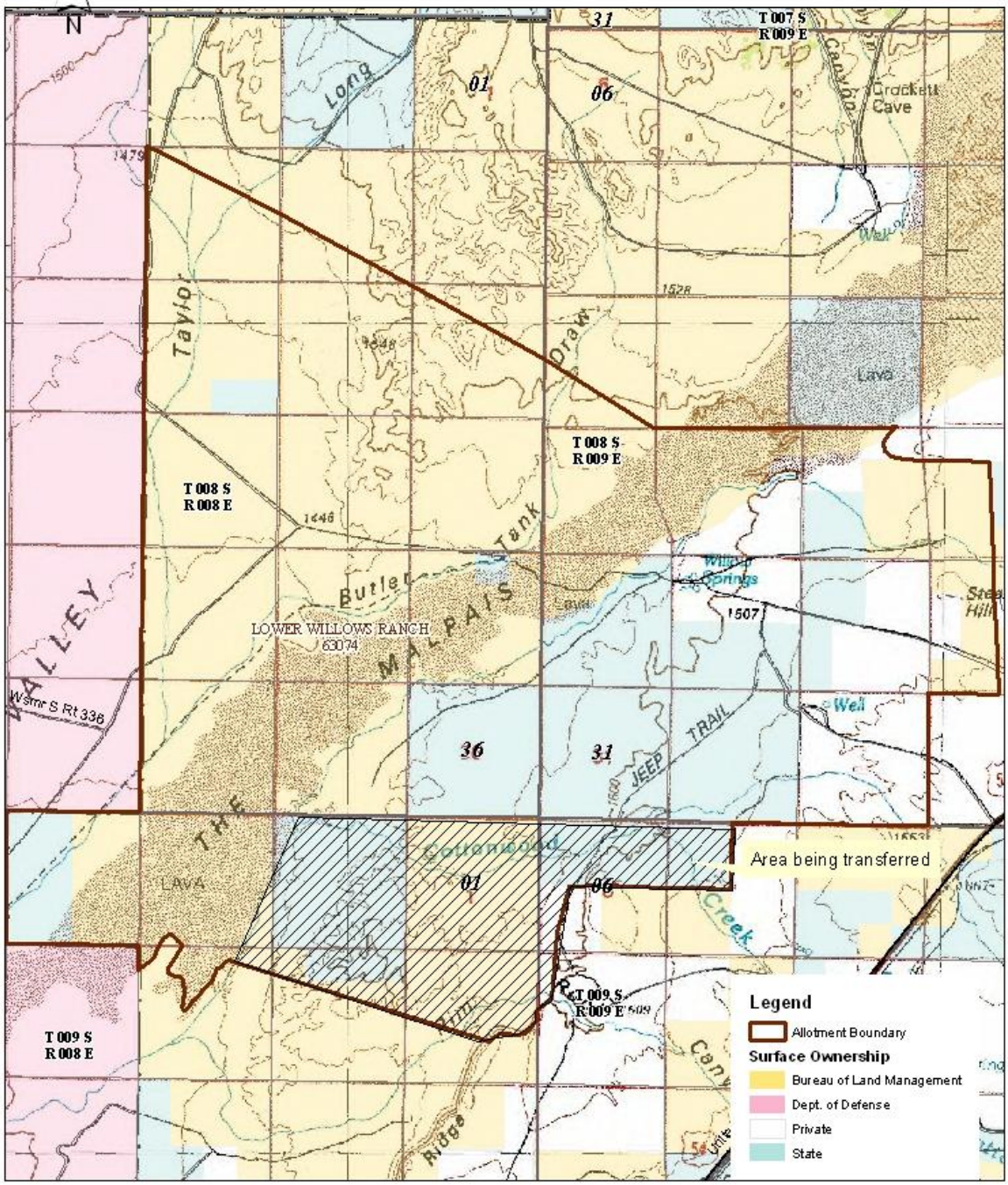
See Map

DOI-BLM-NM-P010-2010-0076 - EA

6-8-2010

U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico

Lower Willows Ranch #63074



I. BACKGROUND

Purpose and Need for the Proposed Action

The purpose is to issue a new 10 year grazing permit to authorize livestock grazing on public range on the Lower Willows Ranch allotment #63074. 4.05 sections of this grazing allotment (see map) has been transferred to an adjacent allotment, and a new 10 year grazing permit will be needed to reflect the adjustment in percent public land and the number of authorized animal units. When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) must conduct a site-specific NEPA analysis before issuing a permit to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing permit on these allotments. The permit would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, 4130.3-2, and 4180.1.

The scope of this environmental assessment is limited to the effects of issuing a new grazing permit on this allotment. Over time, the need could arise for subsequent management activities which relate to grazing authorization. These activities could include vegetation treatments (e.g., prescribed fires, herbicide projects), range improvement projects (e.g., fences, water developments), and others. Future rangeland management actions related to livestock grazing would be addressed in project-specific NEPA documents as they are proposed.

Though this environmental assessment specifically addresses the impacts of issuing a grazing permit on this allotment, it does so within the context of overall BLM management goals. Allotment management activities would have to be coordinated with projects intended to achieve those other goals. For example, a vegetation treatment designed to enhance watershed condition or wildlife habitat may require rest from livestock grazing for one or more growing seasons. Requirements of this type would be written into the permit as terms and conditions.

Conformance with Land Use Planning

The proposed action conforms to the 1997 Roswell Approved Resource Management Plan (RMP) and Record of Decision; and the 2000 New Mexico Standards for Public Land health and Guidelines for Livestock Grazing Management and Record of Decision as required by 43 CFR 1610.5-3.

Relationships to Statutes, Regulations, or Other Plans

The proposal to renew the livestock grazing permit on this allotment is in conformance with the 1994 Environmental Impact Statement for Rangeland Reform; the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (TGA) (43 U.S.C. 315 et seq.); the Public Rangelands Improvement Act of 1978 (PRIA) (43 U.S.C. 1901 et seq.).

II. PROPOSED ACTION AND ALTERNATIVES

No Action Alternative - Current Livestock Management

The no action alternative would issue a ten-year permit to graze 166 cattle and 4 horses on allotment #63074. This would allow the permittee to graze the same number of AUM's on less

surface area and contribute to over utilizing the allotment. Total AUM's for the current authorization is 1162 on 57% percent public land. Before the transfer there was 11,938 acres of Federal land, of which 3202 is in the lava flows (malpais), 4782 acres of State Land, 1399 acres of private land, and 160 acres of uncontrolled land on the allotment.

There would be no changes from current livestock management as conducted by the permittee. Future projects or activities identified by the permittee or the BLM can still be considered for implementation. Rangeland monitoring would continue on the allotment and changes to livestock management would be made as necessary. If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken to mitigate those impacts.

No Grazing Alternative

Under this alternative a new grazing permit would not be issued for this allotment. No grazing would be authorized on federal land on this allotment under this alternative. Under this alternative and based on the land status pattern within the allotment, many miles of new fences would be required to exclude grazing on the federal land.

Alternative C—Proposed Action

Grazing with reduced numbers – BLM would issue a ten year grazing permit to graze 136 cows and 4 horses on the Lower Willows Ranch Allotment #63074. Total AUM's for this new authorization would be 957 AUM'S on 57% Public Land. After the transfer there is 10,579 acres of Federal land, 3202 of which is in the lava flows (malpais), 3,547 acres of State Land, 1,399 acres of private land, and 160 acres of uncontrolled land on the allotment. Additionally a rangeland health assessment has been completed and the allotment does not meet the Standards for Public Land Health. Because of this the BLM will install approximately 30,000 feet of pipeline which will replace the existing pipeline. Additionally there will be three new tire troughs and three 3000 gallon storage tanks along the pipeline. This will create a much more reliable water source and help to promote better livestock distribution. In the event that doesn't accomplish our goals the BLM will complete the appropriate monitoring and consider grazing with reduced numbers based off of monitoring data.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

General Setting

This allotment is located in the Cottonwood Creek Drainage and the Butler Tank Draw, in Lincoln County about 90 miles west of Roswell. See Location Map.

Elevations range from about 4,660 feet on the east point of the allotment down to 4200 feet along the western boundary.

The climate is semi-arid with normal annual temperatures ranging from below 0 degrees Fahrenheit to over 100 degrees Fahrenheit to 95^0F at the Hatch and Socorro climate stations. Average annual precipitation is approximately 8 to 10.5", primarily as rainfall. Annual precipitation has ranged from 2 inches to over 20 inches.

Affected Resources

The following resources or values are not present or would not be affected by the authorization

of livestock grazing on these allotments: Areas of Critical Environmental Concern, Cultural Resources, Floodplains, Native American Religious Concerns, Visual Resources, Prime or Unique Farmland, Minority/Low Income Populations, Hazardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness. Cultural resources are not usually adversely affected by livestock grazing, although concentrated livestock activity such as around livestock water troughs can have adverse effects on the cultural resource. Prior to authorizing range improvements, a Class III Cultural Survey must be completed ensuring cultural resources will not be affected. There are no known cultural resources within the allotment. Affected resources and the impacts resulting from livestock grazing are described below.

Vegetation

Affected Environment

The allotment is comprised of two major vegetation community types arranged over the allotment. Mixed shrub communities dominate the uplands while mid and tall grasses with occasional shrubs or half shrubs dominate the lowland areas.

General objectives or guidelines for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997) and the Roswell Draft RMP/EIS (BLM 1994).

Grasslands are intermixed with all community types. Sand dropseed, three-awn, black grama, bush muhly and fluffgrass are common in the sandy uplands. Alkali sacaton is the dominant species in the bottomlands which is interspersed with blue grama and silver bluestem. Tobosa is found in both sandy uplands and bottomlands. Grassland sites also have a mesquite or broom snakeweed shrub component. Blue grama is primarily found on loamy soils and black grama on more gravelly soils. Gyp grama is common on the gypsiferous soil types found throughout the allotment.

Grassland communities on the uplands and shallow breaks support a large percentage of shrub species. Mesquite, broom snakeweed, fourwing saltbush, yucca, cholla, and Christmas cactus are common shrub species. The primary grasses are sand dropseed and bush muhly, vine mesquite and black grama.

The Mixed Shrub community is found primarily on the upland sites with sandy, loamy, and gravelly soils. This community supports a larger percentage of shrub species than the other types. Mesquite, creosote, and tarbush are common with creosote occurring in the more gravelly portions of these soil types. .

The DDC Community is comprised of the major drainages crossing the allotment, including cottonwood creek drainage and the butler tank draw which are the largest.

The Rangeland Health assessments indicate a problem with invasive plants, most notably mesquite, creosote, and tarbush. Mesquite and tarbush dominates the Sandy and Loamy Sand ecological sites and affects both the plant community and hydrologic functions of these sites. The Rangeland Health assessments or this allotment can be viewed by the public at the website: www.blm.gov/nm/st/en/fo/Roswell_Field_Office/roswell_document_library.html

Rangeland monitoring studies have been established in two key areas within the allotment. One area is situated in a Sandy SD-2 ecological site complex (North pasture), and one is in the loamy SD-2 ecological site (South Pasture). These permanent sites are used to track

vegetation changes and to determine proper stocking rates. Range study sites contain alkali sacaton and tobosa, or sand dropseed, blue and black grama, which are the key species for range condition determinations.

The description for these ecological sites was developed by the Soil Conservation Service (now referred to as the National Resource Conservation Service) in their ecological site guides. Ecological site descriptions are available for review at the Roswell BLM office, any Natural Resources Conservation Service office or accessed at www.nm.nrcs.usda.gov.

From 1978 to 1999 agencies were using the traditional range condition methodology to depict range condition. This compared collected rangeland monitoring information with the potential vegetation community in terms of species composition by weight. The rating is based on a scaled of 0 to 100 with 100 being the actual representative site.

In 1999 the National Resource Conservation Service (NRCS) revised the methodology for comparing the existing vegetation community with the potential vegetation community and to aid in the determination of ecological condition. This methodology is called the Similarity Index (SI) the BLM is currently incorporating this revision into the monitoring and evaluation processes. The SI compares existing vegetation data (collected from rangeland monitoring) with the potential vegetation community described in the NRCS ecological site guide for that site. The index is based on a scaled of 0 to 100 with 100 being the actual representative site. For the Sandy SD-3 ecological (range) site, the normal year production is about 900 pounds per acre. The index takes into account vegetation species present and the relative amount of production for each species when compared to the potential for the range site.

The Roswell Field Office is currently in the process of integrating the revised methodology into current monitoring and evaluation processes. The traditional range condition rating method (used from 1980 to 1998) is retained for comparison purposes.

The percent bare ground and rock found on the allotment fall within the parameters established by the RMP/EIS for this vegetative community. Copies of the monitoring data and the analysis of the data are available at the Roswell Field Office.

Monitoring data has been collected in fiscal years 1983, 1987, 1992. Analysis of the monitoring data indicates range condition is not satisfactory. The rangeland monitoring studies indicate that range problems exist other than stocking rates. These problems will be resolved through range improvements, vegetation treatment and management. The long term vegetative production, ground cover and trend data for these allotments are available at the following website address: http://nm.blm.gov/rfo/index.htm.

Noxious and Invasive Weeds: Noxious weeds affect both crops and native plant species in the same way, by out-competing for light, water and soil nutrients. Losses are attributed to decreased quality and quantity of agricultural products due to high levels of competition from noxious weeds and infestations. Noxious weeds can negatively affect livestock productivity by making forage unpalatable to livestock thus decreasing livestock productivity and potentially increasing producer's feed costs. Currently Saltcedar (*Tamarix*) is present on the allotment around Lower Willow Springs.

<u>Environmental Impacts</u>

Under the proposed action the vegetation in the Grassland community will continue to be grazed and trampled by domestic livestock as well as other herbivores. The area has been

grazed by livestock since the early part of the 1900's, if not longer. Ecological condition and trend is expected to remain stable and/or improve over the long term at the permitted number of livestock.

The Mixed Desert Shrub vegetation community found in portions of the allotment would reflect lighter use because primary forage species are not well represented in these drier areas, and livestock will not concentrate on steeper slopes.

Upland sites would reflect a static ecological condition trend at the existing permit level. Some grassland areas would remain static due to the high composition of mesquite and creosote. In the long term, upland vegetation would continue to improve in all pastures from the implementation of a rest-rotation system.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover would increase over the long term in some areas. Grasslands in the uplands would increase in cover and composition, but composition would be tempered by mesquite somewhat dominating the shrub component. Alkali sacaton in the bottomlands would, in the short term, increase in cover and composition but would then taper off in the long term, becoming decadent from the lack of standing vegetation removal by grazing.

Soils

Affected Environment

The Soil Survey of Lincoln County, New Mexico (USDA Soil Conservation Service 1983) was used to describe and analyze impacts to soils on these allotments. There are seven soil map units represented on the allotment: The soil units covering the most area are described below, more in depth information can be found in the soil survey.

Gabaldon silt loam, 0 to 2 percent slopes Permeability of the Gabaldon soil is moderate. Available water capacity is very high. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high. This soil is subject to frequent, very brief periods of flooding in summer.

Lozier very gravelly loam, very steep Permeability of the Lozier soil is moderate. Available water capacity is very low. Runoff is rapid, and hazard of water erosion is high. The hazard of soil blowing is slight.

Onite-Bluepoint association, hummocky Permeability of the Onite soil is moderately rapid. Available water capacity is moderate. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is very high. Permeability of the Bluepoint soil is rapid. Available water capacity is low. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is very high.

Tulargo-Andergorge association, gently sloping Permeability of the Tulargo soil is moderate. Available water capacity is high. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high. Permeability of the Andergeorge soil is moderately rapid. Available water capacity is low. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high.

Reflection-Malargo association, moderately sloping Permeability of the reflection soil is moderate. Available water capacity is very high. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high. Permeability of the Malargo soil is moderate. Available water capacity is high. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high.

Lava Flows Lava flows consists of angular boulders and crevices and a few smooth areas. The deposit ranges from a few feet to about 65 feet in thickness. Numerous juniper trees and shrubs grow in the cracks and crevices where wind-deposited soil materials have been trapped.

Malargo-Bluepoint association, hummocky Permeability of the Malargo soil is moderate. Available water capacity is high. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high. Permeability of the Bluepoint soil is rapid. Available water capacity is low. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is very high.

Environmental Impacts

Under the Proposed Action, livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975). Producing forage and protecting the soil from further erosion would then be more difficult. The greatest impacts of removing vegetation and trampling would be expected in areas of concentrated livestock use, such as trails, waters, feeders, and shade.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion. Low/moderate forage quality plants provide protection to the soils resource. Cumulative long term monitoring data reflect the soils are being adequately protected. However, the monitoring data also reflects that the soils are being protected by less than desirable plants.

Under No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Water Quality

Affected Environment - Ground Water

Fresh water sources are in the Quaternary Shallow Alluvium Aquifer. Depth to water in nearby wells in the shallow aquifer ranges from 50 to 60 feet (Water Table Contour Map of Part of East Chaves County, Geohydrology and Associates 1978).

Environmental Impacts – Ground Water

Direct impacts to surface water quality would be minor, short-term impacts during stormflow. Indirect impacts to water-quality related resources, such as fisheries, would not occur. The proposed action would not have a significant effect on ground water. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants.

Affected Environment – Surface Water
No perennial surface water is found on the Public Land on this allotment.
Environmental Consequences – Surface Water
No impacts.

Wildlife

Affected Environment
The allotment provides a variety of habitat types for terrestrial wildlife species. The diversity and abundance of wildlife species in the area is due to the presence of a mixture of Chihuahuan desert grassland habitat, mixed desert shrub vegetation and the unique landform and vegetation found within the Carrizozo Malpais which bisects the allotment northeast-southwest.

Common mammal species using the area include mule deer, pronghorn, coyote, gray fox, bobcat, striped skunk, porcupine, raccoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat.

A large colony of Arizona black-tailed prairie dogs exists in the western portion of the allotment, situated between the White Sands Missile Range (WSMR) on the west and the lava flow to the east. Introduced oryx are known to occur on the ranch and surrounding habitat where they have moved off of WSMR.

Numerous avian species use the area during spring and fall migration, including non-game migratory birds. Common bird species are mourning dove, mockingbird, white-crowned sparrow, black-throated sparrow, blue grosbeak, northern oriole, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, burrowing owls and occasionally golden eagle and ferruginous hawk. Re-introduced Aplomado falcons may eventually venture into the area from the south but are not currently known to utilize habitat at this time.

A variety of herptiles also occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad.

Environmental Impacts
Under the Proposed Action (No action), livestock grazing management and range improvement projects designed with consideration for wildlife would generally enhance the quality of wildlife habitat. Vegetation condition, forage production, and habitat diversity would improve, and wildlife species distribution and abundance would increase. The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution and abundance, but may potentially increase grazing pressure in those same areas, or encourage the use of the area by oryx that will utilize water sources and vegetation. Short-term impacts of range improvement projects would be the temporary displacement of wildlife species during construction activities.

Under No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the existing invading species component (e.g., mesquite, snakeweed) affecting plant composition. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would

be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts.

Special Status Species, Including Threatened and Endangered Species

Affected Environment

The Northern Aplomado falcon is a federally listed endangered species of Mexico and the southwestern United States. No United States nesting had occurred since 1952, prior to managed re-introduction in south Texas beginning in the mid-1990s and one confirmed instance of successful breeding in New Mexico in 2002. Aplomados were largely eliminated in the Southwest and northern Mexico due to shrub encroachment in desert grasslands and other habitat loss.

A controversial program for managed introduction of Aplomado Falcons from subtropical grassland habitats into Arizona and New Mexico has been initiated by The Peregrine Fund and the U.S. Fish and Wildlife Service. In 2008, the NMESFO coordinated with The Peregrine Fund to reintroduce a total of 70 juvenile northern Aplomado falcons to 3 locations in New Mexico: 2 sites on Turner Enterprises' Armendaris Ranch and 1 location approximately 25 miles to the north that encompasses release towers on White Sands Missile Range, BLM, and NM State Lands. The state lines of New Mexico and Arizona forms the boundaries for a new non-essential, experimental population of the endangered northern Aplomado falcon. Falcon habitat includes Chihuahuan desert grasslands in both states.

Under the non-essential experimental population designation, any birds in Arizona or New Mexico are no longer considered endangered, although they will continue to have some protections under the ESA. The designation allows greater flexibility for land managers where falcons occur.

The Arizona blacktailed prairie dog inhabits the western portion of the allotment and covers about 600 acres and is approximately 2 miles in length. The habitat requirements include a grassland ecosystem with soils that permit deep and extensive burrowing (Sotim-Russler soil association). Vegetation will vary from north to south in relative cover - 60% alkali sacaton/10% burrograss, 65% burrograss/30% alkali sacaton and 90% tobosagrass /5% alkali sacaton. Barren areas are common in the flats. Honey mesquite, creosote and tarbush are the common brush species.

The Arizona black-tailed prairie dog was listed by the U.S. Fish and Wildlife Service as a candidate species warranted for listing as federally threatened under the Endangered Species Act. The Fish and Wildlife Service completed a status review of the black-tailed prairie dog and determined it does not warrant protection as a threatened or endangered species under the Endangered Species Act. The species remains on BLM's Sensitive Species List due to its keystone species significance.

Environmental Impacts

Under the Proposed Action (No action), livestock grazing management and range improvement projects designed with consideration for wildlife would generally enhance the quality of wildlife habitat. Vegetation condition, forage production, and habitat diversity would improve, and wildlife species distribution and abundance would increase. The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution and

abundance including prey base for Aplomado falcon, but may potentially increase grazing pressure in those same areas, or encourage the use of the area by oryx that will utilize water sources and vegetation. Short-term impacts of range improvement projects would be the temporary displacement of wildlife species during construction activities. Large, tall yucca would be buffered from any vegetation treatments to perpetuate potential nesting habitat for the falcon.

Under No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the existing invading species component (e.g., mesquite, snakeweed) affecting plant composition. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts. Increasing brush species such as creosote, mesquite and tarbush in and around the black-tailed prairie dog colony may limit habitat conditions for prairie dog by increased cover for predators and perching sites for raptors.

Air Quality

Affected Environment

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility.

The area around the allotment is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment. Air quality in the area is generally good and is not located in any of the areas designated by the Environmental Protection Agency as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act.

The allotment is in a Class II area for the Prevention of Significant Deterioration of air quality as defined by the federal Clean Air Act. Class II areas allow a moderate amount of air quality degradation.

Air quality in the region is generally good, with winds averaging 10-16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Air quality would temporary be directly impacted with pollution from enteric fermentation (ruminant livestock), chemical odors, and dust. Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action or Alternative B than No-Grazing Alternative. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

The federal Clean Air Act requires that air pollutant emissions be controlled from all significant sources in areas that do not meet the national ambient Air quality standards. The New Mexico

Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source must comply with the NMAQB regulations (USDI, BLM 2003b). At the present time, the counties that lie within the jurisdictional boundaries of the Roswell Field Office are classified as in attainment of all state and national ambient air quality standards as defined in the Clean Air Act of 1972, as amended (USDI, BLM 2003b).

The Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the National Ambient Air Quality Standard (NAAQS) for particulate matter ranging from 2.5 micron or smaller particle size. This ruling became effective on December 18, 2006, stating that the 24-hour standard for PM2.5, was lowered to 35 ug/m^3 from the previous standard of 65 ug/m^3. This revised PM2.5 daily NAAQS was promulgated to better protect the public from short-term particle exposure. The significant threshold of 35 ug/m^3 daily PM2.5 NAAQS is not expected to be exceeded under the proposed action.

Climate

Affected Environment

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. GHG's and the potential effects of GHG emissions on climate are not regulated by the EPA, however climate has the potential to influence renewable and non-renewable resource management.

Greenhouse gases, including carbon dioxide (CO2) and methane (CH4), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, climate has the potential to influence renewable and non-renewable resource management. The EPA's Inventory of US Greenhouse Gas Emissions and Sinks found that in 2006, total US GHG emissions were over 6 billion metric tons and that total US GHG emissions have increased by 14.1% from 1990 to 2006. The report also noted that GHG emissions fell by 1.5% from 2005 to 2006. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation.

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures.

A 2007 US Government Accountability Office (GAO) Report on Climate Change found that, "federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others: 1) physical effects such as droughts, floods, glacial melting, and sea level rise; 2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and 3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses." It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed lease parcels and subsequent actions.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

Environmental Impacts

Climate change analyses are comprised of several factors, including greenhouse gases (GHGs), land use management practices, the albino effect, etc. The tools necessary to quantify climatic impacts from the Proposed or No Action Alternatives are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that may contribute to climate change. Qualitative and/or quantitative evaluation of potential contributing factors within the planning area is included where appropriate and practicable.

Livestock Management

Affected Environment

This allotment has been permitted to be grazed yearlong by cattle and horses. This permit authorize 136 cattle and 4 horses, and this use level is based on a Livestock Use Agreement. Grazing is by a cow/calf operation.

The allotment after the transfer now contains about 13,336 total acres (see Location Map). Landownership consists of approximately 1399 acres of private land, 10,579 acres of federal land, 3547 acres of state land, and 160 acres of uncontrolled land. Current range improvement projects for the management of livestock include wells, and several drinking troughs with associated pipelines, pasture and boundary fences and corrals.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze public lands within the allotments. Existing pasture configurations and water developments would remain the same. Livestock management would still follow the single-herd rotation system.

Under No-Grazing Alternative, there would be no livestock grazing authorized on public lands. The public lands would have to be fenced apart from the private lands or livestock would be considered in trespass if found grazing on public land (43 CFR 4140.1(b)(1)). Exclusion of livestock from the public land would require many miles of new fence at an approximate cost of $4,500/mile. This expense would be borne by the private landowner. Range improvements on

public land would not be maintained and the BLM would have to compensate the permittee if any of the improvements were cost shared at the time of their authorization.

Under No-Grazing Alternative, the overall livestock operation could be reduced by 140 AUs (those attached to the public lands) to approximately 0 AUs. This would have an adverse economic impact on the permittee.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in Rangeland Reform '94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994) and in the Roswell Resource Area Draft RMP/EIS (BLM 1994). The no livestock grazing alternative was not selected in either document.

Recreation

Affected Environment
The allotment provides habitat for numerous game species including oryx, mule deer, pronghorn, mourning dove and scaled quail. Predator hunting may occur on the allotment, as well as trapping for predators or furbearers.

General sightseeing, wildlife viewing and photography are non-consumptive recreational activities that may occur. Rock collectors find various minerals unique to the area, such as Pecos diamonds.

Environmental Impacts
Game and non-game wildlife species could realize long-term benefits through the improvement of habitat. It is expected that hunter success and wildlife viewing opportunities would be enhanced.

Under No-Grazing Alternative, no conflicts between ranching activities and recreational use would occur on public lands. Success of hunts and non-consumptive opportunities would remain the same or slightly improve. Vandalism could still occur to range improvements. Conflicts with OHV use would continue.

Cave and Karst

Affected Environment
Caves and other karst features of the Roswell Cave Complex Area of Critical Environmental Concern (ACEC) have been documented in allotments 63077, 63177 and 63076 on the west side of the Carrizozo Lava Flow. In February 2007, on the east side of the lava flow, members of the Mesilla Valley Grotto (National Speleological Society - NSS) discovered a cave system separate from the ACEC on BLM-managed public land in allotment 63081 and named it the Smiley Cave System. Karst features are derived from dissolved limestone and gypsum from which caves and sinkholes can form. Lava tubes are also considered caves under the definition of caves in the Federal Cave Resource Protection Act of 1988. No lava tubes have been found in the allotments but the potential exists for future discoveries as lava tubes do occur near Little Black Peak at the northern end of the flow and evidence of lava tubes has been seen throughout the entire flow.

Most caves in the Cave Complex ACEC are in the Roswell region. In the Tularosa Basin allotments, Cave Complex ACEC caves and sinkholes occur primarily where arroyos contact the lava - the gypsum caves formed through erosion and run under the lava at about a 45°

angle. Crockett's Cave is a limestone and gypsum cave that does not appear to be associated with the lava flow and is situated about ½-mile west of the lava flow. It is gated and accessible by permit only and when that occurs, the BLM cave specialist notifies the allottees/private land owners because cave visitors must cross private land to arrive at Crockett's Cave.

On discovery of the Smiley Cave System, primarily two caves formed in sinkholes, the cavers had immediately notified BLM and reported the system looked extensive and had hibernating bats. Also, due to the quantity of guano, they suspected a summer maternity roost. Hibernating bats observed were Townsend's Western Big-eared (Coryhinorinus townsendii), Cave Bat (Myotis velifer) and Small-footed Bat (Myotis celiolabrum). None of these bat species are threatened or endangered. To access the public land, the cavers received permission from the private landowner to cross his private land.

The Mesilla Valley Grotto and other grottos (chapters) of the Southwest Region NSS, work on a regular basis with the Roswell Field Office under a statewide cooperative management agreement. The Mesilla Valley Grotto continues to survey (map) and inventory the Smiley System for resources, ie, mineral types, cave-adapted life, cultural resources, etc.

Pursuant to Federal Register Notices, Vol. 76, No. 16, page 4373, January 23, 2011, all known Roswell Field Office hibernacula are temporarily closed to public entry from January 25, 2011 to no later than January 25, 2013 to monitor for the presence of White Nose Sydrome and prevent its spread if it arrives. White Nose Syndrome) was first documented on hibernating bats in New York and by 2009 it had moved over 450 miles across eight states and had killed well over 1 million bats. By spring of 2010, White Nose Syndrome (WNS) had been found in Oklahoma on cave myotis (Myotis velifer incautus), the first evidence of it infecting a western bat species. Any proposed entry whatsoever of these caves must be formally proposed to BLM.

Environmental Impacts

Livestock grazing could be affected by the presence of karst features if livestock became entrapped in deep sinkholes, which has occurred with sheep grazing on karst land north of Roswell. This could be prevented by creating exclosures around identified karst features that pose a hazard to livestock. In the event that range improvement projects are proposed, the presence of karst features would be further analyzed in related environmental assessments.

IV. CUMULATIVE IMPACTS

A cumulative impact is defined in 40 CFR 1508.7 as:

> "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The analysis of cumulative impacts focuses on the geographical area defined as the Lower Willows Ranch allotment within the Cottonwood Creek drainage as illustrated on the attached map and listed under Table 1. The specific resources being impacted are limited to those that are most important in terms of impacts resulting from remedial actions needing to be implemented to improve current environmental conditions.

The incremental impact of issuing a grazing permit on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the identified resources include: livestock authorization on other allotments in this area; oil and gas activities on the uplands; rights-of-way crossing the area; and recreation use, particularly off-highway vehicles. All authorized activities which occur on BLM land can also take place on state and private land.

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Oil and gas activities began in the early part of the 20th century. These activities are still occurring today, and are expected to continue into the foreseeable future to some degree.

The analysis of cumulative impacts is driven by major resource issues. The proposed action is the authorization of livestock grazing on these allotments. The cumulative impacts to these allotments and adjacent allotments are insignificant.

The Proposed Action would not add incrementally to the cumulative impacts to threatened and endangered species, or to water quality. The conclusions, that impacts to these resources, from grazing authorization would not be significant are discussed in detail in Section III of the EA.

If the No-Grazing Alternative were chosen, some adverse cumulative impacts would be eliminated, but others would occur. Grazing would no longer be available as a vegetation management tool, and BLM lands within the allotment would be less intensively managed.

While global and national inventories of GHG are established, regional and state-specific inventories are in varying levels of development. Quantification techniques are in development – for example, there is a good understanding of climate change emissions related to fuel usage; however measuring and understanding the effects are less comprehensive. Analytical tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined.

Due to the absence of regulatory requirements to measure GHG emissions it is not possible to accurately quantify potential GHG emissions in the affected areas as a result of renewing grazing permits. Some general assumptions however can be made: livestock, operating vehicles to support livestock grazing, and vehicles transporting livestock contribute to GHG emissions.

The New Mexico Greenhouse Gas Inventory and Reference Case Projection 1990-2020 (Inventory) states agricultural activities, including manure management, fertilizer use and livestock account for 7% of New Mexico's total GHG emissions. The Inventory estimates approximately 6.4 million metric tons GHG emissions are projected by 2010 from all agricultural activities in the state. The Inventory states that GHG emissions from livestock, agriculture soil management and field burning were about 6.2 MMT of CO_2 equivalents in 2004. The Inventory makes the assumption that dairy cattle production will grow at the same rate as the general population and no growth in the other categories within agriculture.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust

from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated.

Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions. Forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be more affected by climate change.

V. MITIGATION MEASURES

Vegetation monitoring studies will continue if a new grazing permit were issued under the Proposed Action. Changes to livestock management would be made if monitoring data showed adverse impacts to the vegetation.

If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken at that time to mitigate those impacts.

VI. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

VII. Socio-Economic Factors

The proposed action or as outlined in this document are not anticipated to alter the socio-economic conditions for either the permittees or Lincoln County. Should the no livestock grazing alternative be adopted, economic impacts would occur. Lincoln County would lose tax revenues on approximately 144 head of cattle annually.

Under the no livestock grazing alternative, it would be the responsibility of the permittees to prevent livestock from grazing on the public lands. To accomplish this, the permittees would most likely have to construct fences to exclude the public land. Approximately 12.7 miles of new fence would be needed at a cost of approximately $57,150 ($4,500/mile). BLM would also have to provide compensation to the permittees for their interest in authorized range improvements due to the exclusion of livestock grazing. These costs could be reduced or mitigated by land exchanges with either the state or the permittees to block up the public land.

IX. BLM Team Members

Helen Miller - Rangeland Management Specialist
Adam Ortega - Rangeland Management Specialist
Shane Trautner - Rangeland Management Specialist
Kyle Arnold - Rangeland Management Specialist
Mike McGee - Hydrologist
Rebecca Hill – Archaeologist
Justin Peters—Archaeologist

Howard Parman – Environmental Coordinator
Bill Murry – Outdoor Recreation Planner
Dan Baggao – Wildlife Biologist
Randy Howard - Wildlife Biologist
Jerry Dutchover – Geologist
John Simitz – Geologis
Glen Garnand- Environmental Protection Spec.

X. PERSONS AND AGENCIES CONSULTED

Chaves County Public Land Use Advisory Committee
Mark Marley - Permittee
New Mexico Department of Game and Fish
New Mexico Energy, Minerals, and Natural Resources Department
- Forestry and Resource Conservation Division
New Mexico Environment Department - Surface Water Quality Bureau
New Mexico State Land Office
U.S. Fish and Wildlife Service - Ecological Services
U.S. Fish and Wildlife Service - Fishery Resources Office

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Environmental Assessment Checklist, DOI-BLM-NM-P010-2010-0076 - EA

Resources	Not Present on Site	No Impacts	May Be Impacts	Mitigation Included	BLM Reviewer	Date
Air Quality			X	X		
Soils			X	X		
Watershed Hydrology			X	X		
Floodplains	X					9/7/10
Water Quality - Surface			X	X	SWA Spec/Hydro. /s/ Michael McGee	
Water Quality - Ground			X	X	Geologist/Hydrologist	
Cultural Resources	X				/s/Rebecca L. Hill	28Jul2010
Native American Religious Concerns	X					
Paleontology	X				Archaeologist	
Areas of Critical Environmental Concern	X				/s/J H Parman Plan & Env. Coord.	9/13/10
Farmlands, Prime or Unique		X			/s/Tate Salas	2/28/2010
Rights-of-Way		X			Realty	
Invasive, Non-native Species		X				9/14/2010
Vegetation			X	X	/s/ Shane Trautner	
Livestock Grazing			X	X	Range Mgmt. Spec.	
Wastes, Hazardous or Solid	X				/s/ Jared Reese Nat. Resource Spec.	07/28/2010
Threatened or Endangered Species	X					
Special Status Species			X	X	/s/ DBaggao	09/13/10
Wildlife			X	X		
Wetlands/Riparian Zones		X			Biologist	
Wild and Scenic Rivers	X					
Wilderness	X					
Recreation		X			/s/Bill Murry Outdoor Rec. Plnnr.	7/27/2010
Visual Resources		X				
Cave/Karst			X	X	*/s/ Michael J. Bilbo Cave Specialist*	3/30/11
Environmental Justice		X				07/28/2010
Public Health and Safety		X			/s/ Jared Reese Nat. Resource Spec.	
Solid Mineral Resources		X			/s/ Jerry Dutchover Geo/SPS	07/27/10
Fluid Mineral Resources		X	X		/s/ John S. Simitz Geologist	Aug 30, 2010